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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,020	12/27/2001	Ralph H. Johnson	V637-02670 US	6112

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EXAMINER

NGUYEN, TUAN M

ART UNIT PAPER NUMBER

2828

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/026,020

Applicant(s)

JOHNSON, RALPH H.

Examiner

Tuan M Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 and 45-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 45-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-28 and 45-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-28 and 45-59 are vague and indefinite. For example claims 1, 45 and 53 recited quantum well having a well depth of at least 40 meV is an error. The claim language is misleading because meV is not a measuring unit used for measuring the thickness dimension of the quantum well which render the claims confusing vague and indefinite.

### *Double Patenting*

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 1-28 and 45-59 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-16 and 19-59 of copending Application No. 10/026044, claims 1-

Art Unit: 2828

6 of copending Application No. 10/026055 and claims 1-27 and 29-34 of copending Application No. 10/026016. This is a provisional double patenting rejection since the conflicting claims have not yet been patented. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Claims 1, 45 and 53 of application number 10/026020 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAsSb. Claims 1, 37 and 48 of copending application number 10/026044 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of GaAsSb. Further claim 48 of copending application number 10/026044 recites an AlGaAs confinement layers sandwiching said barrier layers. The limitation in claims 1, 45 and 53 of this application is basically the same as the limitation in claims 1, 37 and 48 of the copending application 10/026044. The claims recite alternative substitution elements such as Al, In, N with the basic material GaAs. Therefore claims 1-28 and 45-59, and claims 1-16 and 19-59 of copending application 10/026044 are considered as the "same invention". Furthermore, the substituted elements are disclosed in each application specification and title of the invention. Thus, the claims are not patentable distinct from each other.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Claims 1, 45 and 53 of application number 10/026020 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of

Art Unit: 2828

InGaAsSb. Claims 1, 3 and 5 of copending application number 10/026055 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAs; AlGaAs and GaAsN confinement layers. The limitation in claims 1, 45 and 53 of this application is basically the same as the limitation in claims 1, 3 and 5 of the copending application 10/026055. The claims recite alternative substitution elements such as Al, In, N with the basic material GaAs. Therefore claims 1-28 and 45-53 and claims 1-6 of copending application 10/026055 are considered as the "same invention". Furthermore, the substituted elements are disclosed in each application specification and title of the invention. Thus, the claims are not patentable distinct from each other.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Claims 1, 45 and 53 of application number 10/026020 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAsSb. Claims 1, 25 and 33 of copending application number 10/026016 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAsSbN. Further claim 25 of copending application number 10/026016 recites an AlGaAs confinement layers. The limitation in claims 1, 45 and 53 of this application is basically the same as the limitation in claims 1, 25 and 33 of the copending application 10/026016. The claims recite alternative substitution elements such as Al, In, N, Sb with the basic material GaAs. Therefore claims 1-28 and 45-59 and claims 1-27 and 29-34 of copending application 10/026016 are considered as the "same invention". Furthermore, the substituted elements are disclosed in

Art Unit: 2828

each application specification and title of the invention. Thus, the claims are not patentable distinct from each other. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-28 and 45-59 are rejected under 35 U.S.C. 102(a) as being anticipated by Jewell et al ('6,359,920).

With respect to claims 1-28 and 45-59, Jewell et al disclose a VCSEL (100) comprising an active region (110) further comprising at least one quantum well (126, 128) of InGaAs and further including GaAs barrier layer (54') sandwiching said at least one quantum well and GaAs confinement layer (70') sandwiching said active region and nitrogen to be used at least 1% in group V of semiconductor material in the active region. The claims recite alternative substitution elements such as Al, N, Sb with the basic material GaAs and the quantum well is up to and including 50%, note col. 5 line 24 to col. 37 line 18, see figures 1-10.

***Response to Arguments***

5. Applicant's arguments filed on March 10 2003 have been fully considered but they are not persuasive.

On page 13 line 15 Applicant argues that Eglash does not teach a quantum well having a well depth of at least 40 meV. Applicant's argument is in error. It is incorrect because meV is not a correct way for measuring the thickness dimension of the quantum well. Applicant also fails to provide any creditability of the quantum well depth to support the argument in order to overcome Eglash's patent. Further on page 15 lines 9-10 Applicant argues that Jewell et al has been cited for its use of nitrogen at a quantity of less than 1%. It is disagreed because at col. 8 line 67 Jewell et al discloses a quantity of nitrogen to be used at least 0.01% of a group V semiconductor material in the active region. Therefore Applicant's argument is not persuasive. Claims 1-28 and 45-59 are not patentable over Jewell et al.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2828

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Communication Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
May 26, 2003